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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CELL ADHESION AND EXTRACELLULAR MATRIX PROTEINS

(57) Abstract: Various embodiments of the invention provide human cell adhesion and extracellular matrix proteins (CADECM) and polynucleotides which identify and encode CADECM. Embodiments of the invention also provide expression vectors, host cells, antibodies, agonists, and antagonists. Other embodiments provide methods for diagnosing, treating, or preventing disorders associated with aberrant expression of CADECM.

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## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US03/25418

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07K 14/00  
US CL : 514/2; 530/350

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 514/2; 530/350Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
noneElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EAST; SEQ Search

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	KOHFELDT, E. et al. Nidogen-2: A new basement membrane protein with diverse binding properties. J. Mol. Biol. 1998. Vol. 282, pages 99-109, note from the attached alignment that Nidogen-2 shares 99.4% identity with SEQ ID NO: 1.	1 ----- 2, 17, 18, 56



Further documents are listed in the continuation of Box C.



See patent family annex.

## \* Special categories of cited documents:

"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"B"	earlier application or patent published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

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Date of mailing of the international search report

06 MAY 2004

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*for*

# INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US03/25418

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1, 2, 17, 18, and 56, as drawn to SEQ ID NO: 1

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

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## BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

The inventions listed as Groups 1-672 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: biologically active fragments are glycine and thus the claims lack a special technical feature.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group 1, claim(s) 1, 2, 17, 18, and 56, drawn to polypeptide having SEQ ID NO: 1.  
Group 2, claim(s) 1, 2, 17, 18, and 57, drawn to polypeptide having SEQ ID NO: 2.  
Group 3, claim(s) 1, 2, 17, 18, and 58, drawn to polypeptide having SEQ ID NO: 3.  
Group 4, claim(s) 1, 2, 17, 18, and 59, drawn to polypeptide having SEQ ID NO: 4.  
Group 5, claim(s) 1, 2, 17, 18, and 60, drawn to polypeptide having SEQ ID NO: 5.  
Group 6, claim(s) 1, 2, 17, 18, and 61, drawn to polypeptide having SEQ ID NO: 6.  
Group 7, claim(s) 1, 2, 17, 18, and 62, drawn to polypeptide having SEQ ID NO: 7.  
Group 8, claim(s) 1, 2, 17, 18, and 63, drawn to polypeptide having SEQ ID NO: 8.  
Group 9, claim(s) 1, 2, 17, 18, and 64, drawn to polypeptide having SEQ ID NO: 9.  
Group 10, claim(s) 1, 2, 17, 18, and 65, drawn to polypeptide having SEQ ID NO: 10.  
Group 11, claim(s) 1, 2, 17, 18, and 66, drawn to polypeptide having SEQ ID NO: 11.  
Group 12, claim(s) 1, 2, 17, 18, and 67, drawn to polypeptide having SEQ ID NO: 12.  
Group 13, claim(s) 1, 2, 17, 18, and 68, drawn to polypeptide having SEQ ID NO: 13.  
Group 14, claim(s) 1, 2, 17, 18, and 69, drawn to polypeptide having SEQ ID NO: 14.  
Group 15, claim(s) 1, 2, 17, 18, and 70, drawn to polypeptide having SEQ ID NO: 15.  
Group 16, claim(s) 1, 2, 17, 18, and 71, drawn to polypeptide having SEQ ID NO: 16.  
Group 17, claim(s) 1, 2, 17, 18, and 72, drawn to polypeptide having SEQ ID NO: 17.  
Group 18, claim(s) 1, 2, 17, 18, and 73, drawn to polypeptide having SEQ ID NO: 18.  
Group 19, claim(s) 1, 2, 17, 18, and 74, drawn to polypeptide having SEQ ID NO: 19.  
Group 20, claim(s) 1, 2, 17, 18, and 75, drawn to polypeptide having SEQ ID NO: 20.  
Group 21, claim(s) 1, 2, 17, 18, and 76, drawn to polypeptide having SEQ ID NO: 21.  
Group 22, claim(s) 1, 2, 17, 18, and 77, drawn to polypeptide having SEQ ID NO: 22.  
Group 23, claim(s) 1, 2, 17, 18, and 78, drawn to polypeptide having SEQ ID NO: 23.  
Group 24, claim(s) 1, 2, 17, 18, and 79, drawn to polypeptide having SEQ ID NO: 24.  
Group 25, claim(s) 1, 2, 17, 18, and 80, drawn to polypeptide having SEQ ID NO: 25.  
Group 26, claim(s) 1, 2, 17, 18, and 81, drawn to polypeptide having SEQ ID NO: 26.  
Group 27, claim(s) 1, 2, 17, 18, and 82, drawn to polypeptide having SEQ ID NO: 27.  
Group 28, claim(s) 1, 2, 17, 18, and 83, drawn to polypeptide having SEQ ID NO: 28.  
Group 29, claim(s) 1, 2, 17, 18, and 84, drawn to polypeptide having SEQ ID NO: 29.  
Group 30, claim(s) 1, 2, 17, 18, and 85, drawn to polypeptide having SEQ ID NO: 30.  
Group 31, claim(s) 1, 2, 17, 18, and 86, drawn to polypeptide having SEQ ID NO: 31.  
Group 32, claim(s) 1, 2, 17, 18, and 87, drawn to polypeptide having SEQ ID NO: 32.  
Group 33, claim(s) 1, 2, 17, 18, and 88, drawn to polypeptide having SEQ ID NO: 33.  
Group 34, claim(s) 1, 2, 17, 18, and 89, drawn to polypeptide having SEQ ID NO: 34.  
Group 35, claim(s) 1, 2, 17, 18, and 90, drawn to polypeptide having SEQ ID NO: 35.  
Group 36, claim(s) 1, 2, 17, 18, and 91, drawn to polypeptide having SEQ ID NO: 36.  
Group 37, claim(s) 1, 2, 17, 18, and 92, drawn to polypeptide having SEQ ID NO: 37.  
Group 38, claim(s) 1, 2, 17, 18, and 93, drawn to polypeptide having SEQ ID NO: 38.  
Group 39, claim(s) 1, 2, 17, 18, and 94, drawn to polypeptide having SEQ ID NO: 39.  
Group 40, claim(s) 1, 2, 17, 18, and 95, drawn to polypeptide having SEQ ID NO: 40.  
Group 41, claim(s) 1, 2, 17, 18, and 96, drawn to polypeptide having SEQ ID NO: 41.  
Group 42, claim(s) 1, 2, 17, 18, and 97, drawn to polypeptide having SEQ ID NO: 42.

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Group 85, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 1.  
Group 86, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 2.  
Group 87, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 3.  
Group 88, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 4.  
Group 89, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 5.  
Group 90, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 6.  
Group 91, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 7.  
Group 92, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 8.  
Group 93, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 9.  
Group 94, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 10.  
Group 95, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 11.  
Group 96, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 12.  
Group 97, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 13.  
Group 98, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 14.  
Group 99, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 15.  
Group 100, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 16.  
Group 101, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 17.  
Group 102, claim(s) 8, drawn to transgenic organism comprising polynucleotide encoding polypeptide having SEQ ID NO: 18.

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Group 463, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 1.  
Group 464, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 2.  
Group 465, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 3.  
Group 466, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 4.  
Group 467, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 5.  
Group 468, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 6.  
Group 469, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 7.  
Group 470, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 8.  
Group 471, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 9.  
Group 472, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 10.  
Group 473, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 11.  
Group 474, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 12.  
Group 475, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 13.  
Group 476, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 14.  
Group 477, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 15.  
Group 478, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 16.  
Group 479, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 17.  
Group 480, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 18.  
Group 481, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 19.  
Group 482, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 20.  
Group 483, claim(s) 25, drawn to a method of treatment by administering the antagonist of polypeptide having SEQ ID NO: 21.

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Group 547, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 1.  
Group 548, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 2.  
Group 549, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 3.  
Group 550, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 4.  
Group 551, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 5.  
Group 552, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 6.  
Group 553, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 7.  
Group 554, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 8.  
Group 555, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 9.  
Group 556, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 10.

Group 579, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO



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Group 588, claim(s) 27, drawn to a method for screening compounds that modulate the activity of polypeptide having SEQ ID NO: 42.

Group 609, claim(s) 28, drawn to a method of screening for compounds that alter the expression of polynucleotide encoding polypeptide having SEQ ID NO: 21.

Group 630, claim(s) 28, drawn to a method of screening for compounds that alter the expression of polynucleotide encoding polypeptide having SEQ ID NO: 42.

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Group 644, claim(s) 29, drawn to a method for assessing toxicity using a polynucleotide encoding polypeptide having SEQ ID NO: 14.



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